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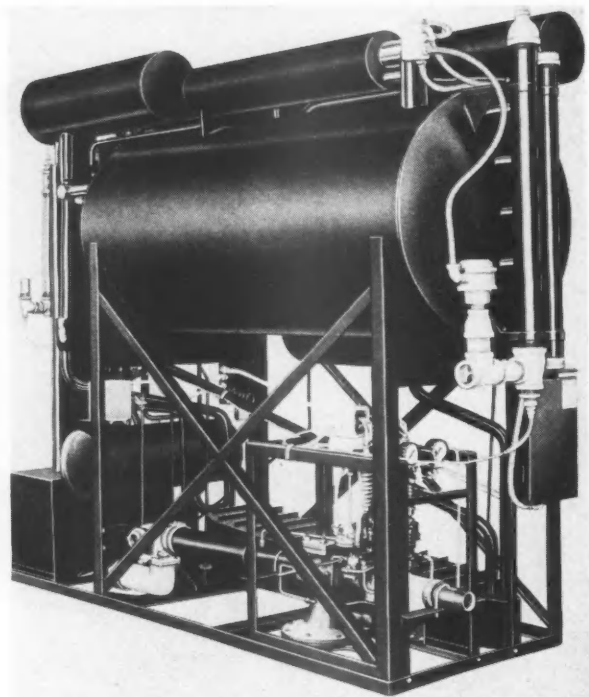
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January, 1960

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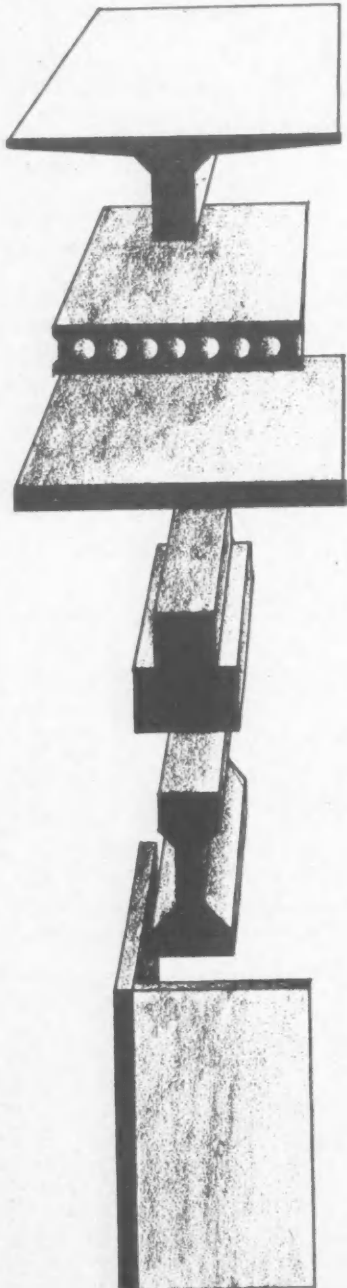
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THE PRESIDENTS' PAGE



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Jimmie R. Nunn

ROSES TO Edward H. Nelson, our immediate past president, for a job well done. Many of the projects started under Ned's administration will continue to function throughout this year.

Three of these projects will require the full-hearted cooperation of every member of our chapter. The one which will undoubtedly take the most time and effort is the hosting of the 1960 A.I.A. Regional Conference to be held in October here in Tucson. Emerson Scholer is at the wheel and Sid Little is right beside him shifting the gears. The second important project will be extending all the help we can give to the city and county on the Urban Renewal Program and Regional Planning. The third will be the staging of our Second Annual Scholarship and Awards Dinner. In connection with this third project we are obligated to replenish the scholarship fund each year to maintain this as a five-year advance program.

The three projects covered above will probably be our biggest; but by no means less important will be the continuation of our working on relations with the Construction & Home Building Industries, assisting in Education and Registration, aiding in Research, co-operating on the School Building program, promotion and enforcement of legislation in connection with the planning and construction of buildings, and collaborating to stimulate and promote a closer relationship between architects and engineers and others practicing the arts of design allied with architecture.

Following is a tentative calendar of events thus far programmed for 1960:

- Jan. 30-Feb. 14 Exhibit booth with panels portraying the importance of "Relationship of Good Architectural Design to Home Building" at Parade of Homes sponsored by Tucson Home Builders Ass'n.
- Feb. 3 - 6:30 p.m. - Joint meeting of Southern Arizona Chapter A.I.A. with Arizona Society of Heating, Refrigeration, and Air Conditioning Engineers on school problems and construction.
- April 18-22 - National A.I.A. Convention in San Francisco.
- May - Second Annual Scholarship & Awards Dinner.
- October - Regional A.I.A. Conference in Tucson.

IT IS INDEED a privilege to take over this portion of the Presidents' Page, where I may express my thanks to all our members for this honor which they have bestowed upon me. It is wonderful that we have such an excellent means of communication as *Arizona Architect* in which I may periodically voice an opinion or inform you of coming events. I shall, from time to time, invite others of our members to share this space with me to express whatever they wish.

We are looking now at the beginning of a very busy year in AIA. Over the past several years I have seen our chapter grow in membership and activities. The past year has been a tremendously successful year under the guidance of John Brenner, and I hope that it was not a climax, but merely another year in the growth and strength of our chapter.

This year we have many important activities to look forward to, which began with a wonderful installation dinner. We also have to plan for the coming visit of the Board of Directors of the National Council of Architectural Registration Boards in February, at which time we will host them all to a "steak fry" at South Mountain Park. The annual joint meeting with the Professional Engineers, to be held this year in March, has always been a success. I am looking forward to a big attendance by our chapter at the national convention in April at San Francisco. In May we go to Tempe as guests of the School of Architecture at Arizona State University, which is becoming an annual affair. We will all concentrate on assisting the Southern Arizona Chapter in preparation for their regional convention in Tucson this fall, and I am sure that it will be a big success.

With these and all the other activities ahead of us this year of 1960, it indeed looks like a Happy New Year and my hopes are that it will be the beginning of a new decade of growth and interest in AIA.

The active participation, attendance, and interest of every corporate, associate and junior associate member of the Chapter in its affairs will produce tangible benefits to each, individually, and will further the cause of good architecture as well as enhance the status of the profession.

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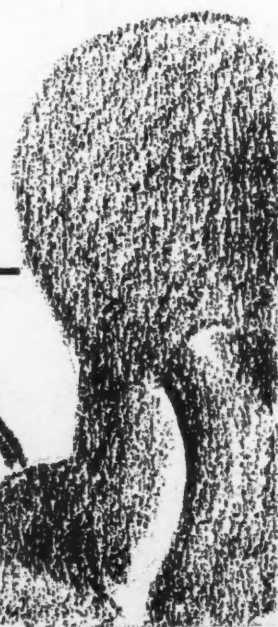
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The Editor's PERSPECTIVE

WOULD SOME SCHOOL TRUSTEE please tell me why boards persist in locating new schools where they do, instead of a block or two off the streets that will inevitably be main thoroughfares?

Phoenix Elementary School Board is faced with a request from the City of Phoenix to pay for a portion of the paving costs on the main arterial streets on which some of their schools are located. A serious split has developed within the board over whether such payments will be made — whether the board shall act like a good citizen (as one side views it), and do its share toward improving the city, or — (as the other side questions), whether it is proper to use educational tax funds to pay for streets that will be largely used by people who are not taxpayers within the school district.

Both sides see real merit in their views, but the pity of it is that the same question will confront many other districts in the future — unnecessarily — because present school boards are not anticipating this problem and putting schools where they ought to be.

Here are a few of the questions that should seriously be asked when considering the location of new schools:

Why not buy land that is unlikely to be on future busy streets? (Away from section lines and half-section lines). Wouldn't such land be less expensive? Wouldn't it be safer for children to approach? Wouldn't it prevent much of the traffic slow-down that most of our schools seem now to cause? Doesn't this slow-down cause an unnecessary public irritation against the schools? Wouldn't schools, if located away from arterials, be quieter and more conducive to learning? Wouldn't they require fewer crossing guards — either at public expense or at the expense of school time? And wouldn't they leave the more valuable land available for commercial, heavy taxpaying uses?

I suspect that many of the troubles that beset the state are the result of a failure to consider alternatives to the obvious.

The other day a high state official said it had not been possible to finance an assault on the highway safety problem because people protested a \$1 increase in driver license fees.

We often hear that teachers can't be more adequately paid because homeowners are bearing all the local property taxes they can stand.

Both of these arguments carry a certain degree of validity, but they're mighty weak. They fail to consider that there are alternatives.

Luxury taxes on liquor and tobacco last year in Arizona were \$6,765,881 — more than half a million a

month. Liquor consumption is unquestionably responsible for a substantial part of highway accidents. Have our officials considered the alternative of increasing taxes there, instead of on driver licenses? There are other alternatives — perhaps better ones.

As to the poor homeowner bearing too much school tax load, why isn't the public told that if the state property tax were increased for school support, it would far more than be offset by reductions at the local district level? And instead of the homeowner having to pay so much, the load would be distributed more equitably across the counties.

The Maricopa County Assessor has admitted that farms are assessed at only 6% of value, whereas homes are assessed at 30% to 40% of value. Why doesn't the legislature allow the alternative of equalizing the assessments between counties and between classes of property?

Texas runs its schools partly on money collected in Arizona and other states as severance tax on the gasoline coming from Texas wells. Why, then, does Arizona not collect a realistic tax on the copper taken from our ground and shipped to Texas and Michigan and other industrial states?

Unless Arizona public officials will honestly consider the alternatives to the time-worn proposals for solutions to problems, let them not deceive themselves and the public with explanations that we cannot afford adequate schools, highway patrols, and humane prisons, and decent, efficient and attractive office facilities for public employees.

All the economic experts predict tight money and high interest rates starting very soon. Elsewhere in this issue is evidence that the cost of building continues to go up and up. Had the state legislature five or even two years ago had the courage to plan and act boldly toward solving the state's building needs by issuing bonds and starting construction, the state would have made money on its investment and the taxpayers would have been better off than they are now going to be.

Public officials who give us excuses instead of finding practical solutions for our problems are lacking in leadership. And if America doesn't have strong, imaginative leadership, then our civilization is due for a fall. This is the year to be asking would-be public officials if they are resourceful enough to consider alternative after alternative until solutions to problems are found.

Phil Litt

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School Planning For Our Times

The following address, delivered recently to a group of school administrators and trustees in Houston, Texas, aroused widespread interest and appreciation. Because of its excellence and informative value, it is reprinted here, with permission, from "Texas Architect."

By R. GRAHAM JACKSON

About the time World War II ended, there was an idea abroad in school building circles that perhaps schools should not be permanent structures — that they could keep better pace with progress if they were designed to be replaced every generation. But this appealing notion soon faded, despite the tremendous replacement rate that has taken place since the war in other types of buildings. What has become clear is that our public buildings do not share this replacement boom. Some of the temporary buildings thrown up in Washington during World War I have been removed so recently that the squirrels still miss them. So there is no such thing as a temporary school and, therefore, no escape from a long look into the educational future. Every expert has his own idea of how things are going to change and some of these ideas sound quite drastic. But the school board that ignores them is looking for trouble. Today's theories may well predict what new schools will be obsolete before their bonds are paid off.

Some of the changes are quite easy to spot because to some extent they are already with us. The teacher shortage is one of these. In spite of the pressure to improve the teacher's lot, it will take a major shift in salary and status to compete effectively against the lure of other careers. Meanwhile, the shortage is already showing in changed teaching techniques and, more slowly, in changed school houses.

Few people really want the size of classes to continue to increase, but many are convinced that some stretch is inevitable. To help ease the tension of numbers, some educators advocate a program of larger classes with one fully trained teacher and one or two less qualified assistants to help out. This can mean different shapes and sizes for class rooms. Some believe that the university teaching system, with rankings of Professor, Assistant Professors, etc. must be extended down into the high schools, with an interlocking system of lectures and lab courses. This can mean more and bigger lecture rooms in the schools, combined with more and better laboratory space. The twelve month school year is another suggestion. This will mean summer air-conditioning in our area.

There are others who maintain that the answer is television, but there is vigorous disagreement whether TV, much as it might assist in teaching, can replace a number of teachers. A few observers even think

that TV teaching requires not fewer teachers in class rooms, but more.

Until the answer to many questions of curriculum and teaching technique are clearer, there is one shrewd hedge available in school design: flexibility. Almost everyone agrees that it is worth going to some trouble and expense to prevent building a school house that will lock the teachers into present curricula and systems and thus prevent experimentation in class sizes, or prelude the possibility of going along with whatever teaching pattern evolves. For instance, more individual teaching can be made possible if large spaces can be subdivided to create rooms for three, five, or ten pupils in a special field. If at the same time two standard rooms can be combined, it is possible to free a teacher to work with one of these small groups.

Architecturally this means erecting long spans with few supporting columns so that partitions can be knocked down and classrooms rearranged without changing the basic school structure. It may mean building movable partitions. It means including conduit or raceways for TV and other transmission lines, even if you do not intend to use them immediately. The future is not just a problem of power outlets. For example: in the matter of larger classrooms, psychologists point out that it is important to offset the press of large audience teaching with compensating facilities, which give the children real privacy at some period during the day, two or three young children working in a small space, or when they are older, a system of booths or cubicles in libraries. With this in mind, some research programs are even developing machines to teach certain subjects. Recording machines are widely used to teach languages. This would mean that the child would be entirely alone during a period of each day or week. These devices have some of the fascination of a pin-ball machine and they also have the advantage that when the child masters something, he advances immediately to the next learning task.

During one year recently, 48,000 adults attended organized adult classes ranging from evening courses in metalwork to amateur theatricals in school auditoriums. This has a direct meaning for school builders: put up school buildings so that the shops, some classrooms, the gymnasium and the theatre can be unlocked, heated and lighted separately. Plan these

SCHOOL PLANNING

community areas for eventual air-conditioning, because they will be used in summer also. Adults are probably going to use the school houses more and not less. Increasing leisure time is one reason for this. In the past fifty years the average industrial work week has shrunk from 51 to 40 hours. In the next 40 years, with the developments in solar and atomic power, many statisticians expect to see this work week halved. As advances in medical techniques extend active life, there is a new mass of elderly people. There are not really too many places besides school houses as a center for their activities in our communities. As our continent becomes more populous, this pressure will increase.

It becomes evident that two separate influences are constantly at work, changing and refining our attitudes and approaches to school planning. Stated simply, these factors are:

Changing concepts in education.

Technological advances in design and materials.

In the quest for greater economy and quality in schools, both architects and educators have been taking a hard look at teaching methods to see how the achievement of these two prime objectives can be sharpened from their point of view. The result is a set of new educational concepts, which, though far from being firmly fixed as yet, are beginning to have

a strong impact on the design of buildings to accommodate the new instructional programs.

School boards are seeing to it that competent, creative educators are available to work with competent, creative architects in solving school building problems. Good architects alone cannot produce excellent schools, nor can good school administrators do the job alone. An excellent school plan comes into being through the team-work of good architects and good school administrators acting as co-captains of a well-balanced architect-educator team. Today we are getting that kind of cooperative planning for many new schools.

School people and architects alike have real reason to be proud of this progress. But there is much to be done — many barriers to break through — before we give our children better school plants. Architectural prejudice, or preconceived ideas about what a school should look like, unwillingness to accept new architecture, and the inability to understand our dynamic society, which requires dynamic architecture, are a cause of expensive sterility of school architecture.

Educational prejudice, or the attitude that "what's good enough for me is good enough for Junior" among people responsible for the education of the community, together with the demands of these same people who insist that their school buildings be as obsolete as their educational program, create great barriers to school building progress.

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Thousands of small pieces of material go into an ordinary school building. These necessitate high labor costs to put them in place. What the architects need are more uniform units with which to formulate economical, beautiful school building solutions. I am not talking about prefabricated schools, or even prefabricated classrooms. I am speaking of a system of modular building units that fit together with less wasted materials and a saving of construction time at the jobsite.

There is a great need for low-cost, low maintenance units such as scuff-proof flooring materials, wall materials that will not require painting, simple and sturdy hardware, less complex heating and plumbing systems and fixtures, and good low-brightness lighting fixtures for low ceilings. There is also a need for sympathetic building trades to install these improved building materials.

The use of stock plans and the static thinking behind them is one of the greatest barriers of all. The people who build these barriers must be brought to realize that *good design* pays off — and actually *costs less* than poor design. The important economies of the day have come about through good design performed by competent planners who seek better answers — not stock answers. The 1920 architectural solutions cannot be used for 1960 schools.

The need for an accurate and true yard stick for evaluating school construction costs is urgent, because

many school planners still try to compare their unit square feet costs as they do their golf scores. "Lower and better," most certainly does not apply to schools and even if it did, the comparison would be worthless because unit cost does not consider such variables as soil conditions, climate, site conditions, educational feasibility, quality of materials, strength of structures, maintenance costs and environmental controls, nor changes in the processes of education. Not every school architect has had to face the new, hard questions, especially if his clients have been those who merely sit back and choose among the architects who happen to apply for the job. If it is true that the difference between a top flight architect and a mediocre one can mean some savings in the cost of the building and infinite differences in the functioning of the buildings, then school boards have cause to seek out architectural service rather than to trust the matter to the market place or to the "yellow pages."

The kind of community which seeks its architect is the kind that asks the new, hard questions. Moreover, this kind of community expects its educators to describe what would go on in the building and why. Before the architect is on the scene, the educator will have been put to the test of reducing to prose the philosophy and practice to be found in the school.

Take, for example, the elementary school. It is held in certain quarters that an elementary school



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SCHOOL PLANNING

consisting of a number of equal-sized classrooms, strung along a corridor with one or two large spaces for physical education, assembling, and food service may not be the most effective way of arranging space for teaching and learning. The self-contained classroom, so revered through the years, where the teacher and her class work together all day is, of course, the easiest arrangement to organize and administer. Just divide the expected enrollment by the presumed class size, apply one or two rules of thumb, such as that the auditorium, if any, shall seat four-sevenths of the enrollment, or that the kindergarten, if any, shall be equal to one and one-half classrooms, and we are off.

Having settled these matters by resort to formula, the school administrator can then return to administration, which is easier than leadership, and the architect can pursue photography or cosmetology, which is easier than architecture.

Each new school plant should be built three times. First, by the educators, in the form of written educational specifications which describe the education program; then, by the architect, in the form of architectural specifications and working drawings which interpret the educational program and its needs; and, last, by the skilled craftsmen of the contractor in the form of the completed building constructed according to the instructions of the architect.

The greatest waste in school construction in recent

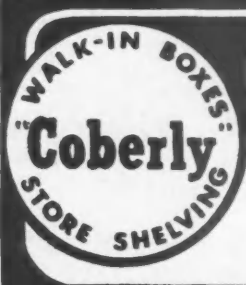
years results from the lack of sufficient attention to educational planning. Even where it is considered important, educational planning is not usually carried to a point of preparing detailed descriptions of educational programs to be housed.

This description is often called the Educational Specifications. It includes detailed descriptions of the groups of pupils to be housed — the kind of educational activity to be carried on in each separate room; the kind and amount of equipment supplies and furniture to be installed in each part of the building, as well as consideration of future expansion.

To date, greatest efforts by educators to obtain economies in construction have been through their architects. Efforts of educators and architects to produce modern functional simple structures, have produced major economies apparent to anyone who makes even superficial comparison of school buildings constructed in the twenties with those erected since World War II. While economies have been substantial, they have been essentially from cleaning up and simplification of building materials and methods.

Gothic Towers and Roman Columns are now considered expensive and unnecessary. We can list such physical improvements as better lighting, controlled thermal environment, effective use of color and new decoration schemes. Much of this good work is due to the initiative and imagination of school architects.

While school architects will continue to make fur-



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ther economies in school building construction, it seems likely that they have already made their greatest contribution by changing from ornate, historical structures to modern functional architecture with more space per dollar expended. The next major improvement with resultant economy in school building lies with the educator and the amount and kind of educational planning that he does for each school.

Many educators have failed to give architects a well thought-out description of their educational program. In fact, many school architects report that they are not given a written description of any school program, either old or new. The only information that they obtained from school officials before they started to work were two small bits: the approximate number of children to be housed and the approximate amount of money available.

This lack of information results in buildings that do not fit today's best educational concepts. For example high school auditoriums continue to be built with all trappings and stage paraphernalia of legitimate stages of two decades ago. Whether a large spectator type of auditorium is desirable in a high school depends upon the wishes of local community leaders and educators. However, since an auditorium of this type represents a major portion of the cost of the high school building and since it probably is the most unused area within the building, it is desirable to re-examine the basic educational con-

cepts behind such a unit.

Another case requiring new diagnosis is the school library. In the past and, unfortunately, many times in the present, school libraries appear to be cathedrals of learning, but, in reality, are mausoleums for books. The trappings and decorum characteristic of high school libraries would gladden the heart of a funeral director. To many, this is a complete antithesis of the library's purpose, books are made to awaken the minds of children and to let imagination take flight. The auditorium and library are only two examples of the re-thinking that must go on before a building can be designed to fit the educational program.

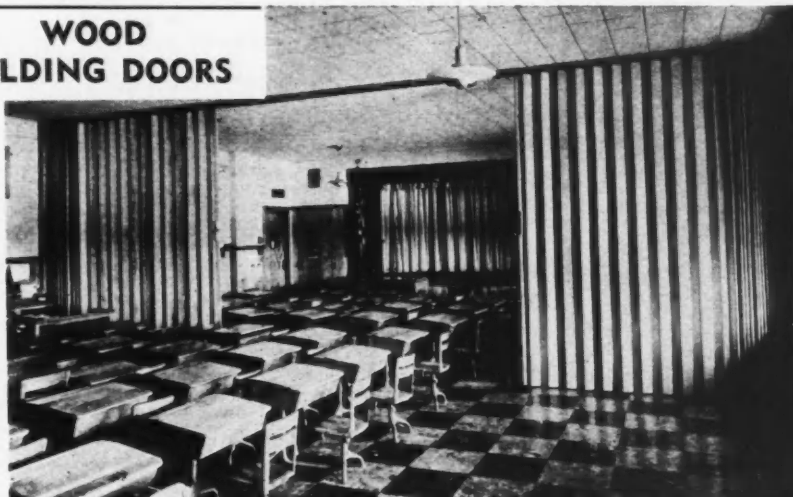
Much so called educational planning contributed by educators in many instances is an invasion of the field of the architect. Without recognizing that they are trespassing, school officials tell the architects that they would like to have brick used here, tile used there, rooms of particular size for this situation, a building of a certain number of prescribed stories with a specific brand of heating and ventilating system. In extreme instances, even blueprints have been prepared by educators and solemnly handed to the architects.

While playing architect, educators often overlook their real role in building a school: that is, to give the architect the best description possible of how the building will be used and the characteristics of the users. By having at his disposal a clear statement

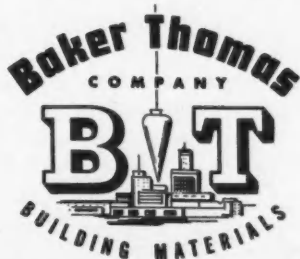
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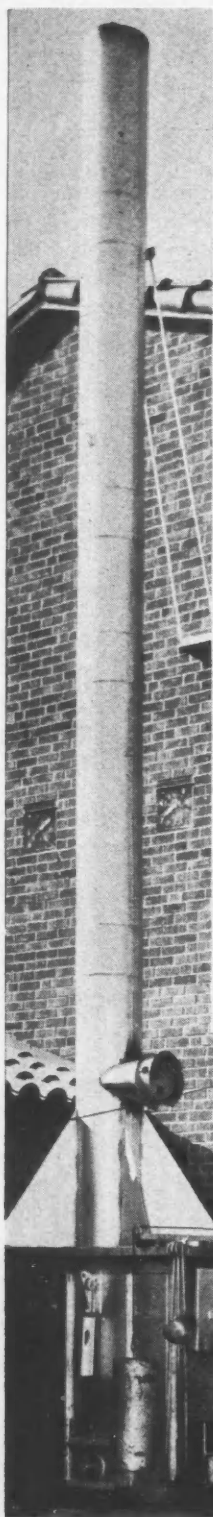
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SCHOOL PLANNING

of a desired educational program which has official approval of the Board of Education, an architect can proceed to his planning directly.

Since most educators and architects have never actually prepared or seen a set of educational specifications, these specifications can best be described by comparing them to architectural specifications which describe a school building in terms of physical materials, dimensions and shapes. In many instances, they even describe precisely the process to be used on construction. Educational specifications describe the educational program in terms of processes and activities to be carried on by various groups that use the building. More precisely, architectural specifications describe physical materials and measurements for school rooms. Educational specifications describe the people and what they will do within those rooms.

The recommended contents for educational specifications can be summarized in three major areas, (1) philosophy and curriculum, (2) administration and organization, and (3) non-instructional service requirements.

The development of these areas can be approached in a variety of ways. A recent school planning guide issued by the State of Michigan listed 25 questions, such as how will groups using the building be organized? What curriculum or programs will be housed? What special activities will require especially designed facilities?

Another approach is to outline the contents of the specifications from a study of various recommendations made by school planning authorities. In any event, the description of the educational program and how it is intended to operate are most important. The benefit from preparing educational specifications as reported by educators who have had experience with this building planning technique are of three kinds:

(1) Benefits to the school system in improving its regular activities, such as curriculum development; (2) benefits of direct value in planning specific new schools, such as forecasting precise personnel requirements and equipment needs; and, (3) benefits in facilitating the work of school architects and proving a tangible basis for estimating the cost of the proposed project.

All the aspects of school building that we have discussed must, in the end, be assembled to fit the budget, the program and the children. The tailor for this job is the architect, and after all conferences, directives, outlines and programs are completed, he must take his scissors into the cutting room, cut the pattern and send it to the contractor to be stitched together. Your school district should get a good fit out of it, and if you are a rapidly growing district, future alterations should not be too difficult.

You may get even more if your architect is a master

tailor, a man whose imagination is a constant pull toward fulfillment of what made him an architect in the first place. It isn't just pride or ambition that makes people work in the PTA, or fun for the School Board, and chances are that it wasn't just a choice of a clean, dry way to make a living that made him into an architect.

An architect is not a pure artist, but an artist of utility. Yet when all the practical aspects of the program have been met, when all the coat closets and thermostats, the chalk board, duct work and piping are figured, the most deeply utilitarian thing the architect can do for a community or parents, administrators, teachers and children is to give them a school building they like, or perhaps even love.

This is more than difficult. It calls for much more even than concentration and labor, or deep knowledge. It calls for sculpture and poetry. This may sound "starry-eyed," but for a moment recall how you may have been stirred into a kind of passive pleasure by certain buildings you have visited — a receptive state of being interrupted mentally in the ordinary grocery-earning routine of thought.

Perhaps you have stood in a cathedral and felt this aloneness with a building, sensed peace and security from the walls, and their unity with the space and the idea they enclosed. There are certain schools that can give you that. Do you remember loving a tree-house when you were a child? Have you sat in a living-room with glass walls and sensed the sympathy of the house for nature, and the seeming reciprocal sympathy of nature for the house and you?

Architecture is something that most people are not aware of in a primary sense. It is confused often with nostalgia, sentimentality, and awe, because these are a few of its most blatant tools. A building is silent and still while its users talk and move. So sometimes we think we are reacting to the users rather than the building. Yet the community that has a great building, or even a good building, gradually becomes aware of that fact, although it may take years. Because we all move in a man-made world, these fine buildings, belonging to everyone, should yield a great personal reassurance of man's eventual success in whatever it is mankind is trying to do.

School houses offer a great opportunity for this. They belong to all of us and the children, who use them most, are a wonderfully aware and unprejudiced group. They are very responsive. Most of the man-made world into which they must grow up is harsh and ugly. If they can learn what is good by being sent to school in a pervasively good building, it is not too much to hope that they may form standards that will help improve some other surroundings which they will reach later.

So give your architect a fair site, a fair budget, and a good educational specification: he may improve your community the way nobody else can. ●



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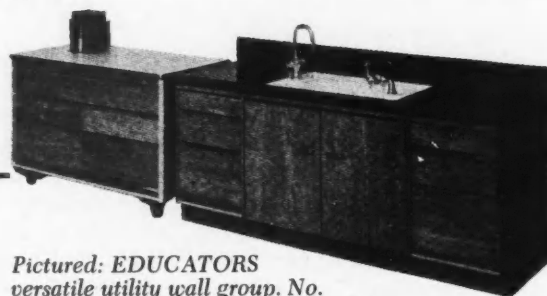
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Is The Site The Same?

FRANCIS W. BRICKER, ARCHITECT
DWIGHT L. BUSBY, ENGINEER

Every Arizona rain proves our
ground isn't really level.



The re-use of complete school building plants on one or more building sites can only lead to compromises and the definite possibility of increased building costs for site drainage, foundations, utilities services and maintenance as well, poor building orientation, congestion in vehicular and pedestrian traffic. The end result might cause ponding of water after rains; soil expansion, foundation movement and cracked buildings, and even flooding or the use of sand bags or dikes to protect poorly located buildings. The building site and the proper use of it becomes a very important consideration in planning and designing a school plant.

One of the first items to be considered is the slope of the site, since several problems have to be considered. A survey should be made, not only to determine property boundaries, but also to determine the topography. Even though two sites may look entirely level, it has been general experience to find as much as ten feet from corner to corner in a twenty acre plot. If two sites should have opposite directions to the slope, of this amount the total difference could be as much as twenty feet without being apparent until a site survey is made. The existing drainage pattern is then determined.

The drainage pattern or topography may be ideal for one site, but could prove disastrous on another, since playgrounds or buildings could be flooded if located in the low point or in the flow pattern. The drainage pattern or topography of the new school ground requires considerable study at each site to determine what changes in contours and building locations should be made to drain, not only the site but drainage of areas around the school site.

The proper layout of buildings, service and play areas to take advantage of the natural slope and drainage pattern helps solve problems in the use of excessive concrete foundation walls, special ramps and steps, and warped walks. If these are not anticipated, and buildings designed for the site, extensive grading is required or the grade may be higher or lower than what is ideal causing drop-offs from walks, long steps, extra berms, special foundation and retaining walls, and even floors below grade.

The type of soil encountered on the surface and underground is another important consideration. The type surface material encountered alerts the architect or engineer to specifying the proper fill and compaction and to what treatment is needed for growth of

turf, shrubs and trees. The underground material encountered requires analysis as to its bearing capacity, as well as its plasticity and shear strength. Additional data is used to determine type and capacity of the sewer disposal system. The foundations are designed to meet the conditions encountered in order to minimize differential settlement. This means the depths, widths and even types, such as grade beams, piles, bell caisson vary at practically every site. The use of an independent testing laboratory in determining the soil properties and conditions is almost a "must" in designing economical, safe foundations.

The size and shape of the site or property affects the use of the space for buildings, service areas, parking and play areas. It is very rare that two sites are the same shape with the same orientation and street frontage so that stock buildings can be placed in the same relationship for good circulation and orientation with the same utilities and service location. Compromises in building location may mean additional custodian service because of time lost in traveling between buildings. It may also mean the loss of existing shrubs and trees which could remain with a new plant layout.

The location of existing utilities or the design of new utilities is also an important factor in the design of sewers, power and water. The slope of the site determines the general layout and slope of the sewer system in that the sewer lines should flow the same way as the slope of the ground and of course to the existing sewer or treatment plant. The electrical service should enter near the point where the greatest connected load is located. The water and gas should be done similarly in order to minimize the use of large pipes for long distances.

The location of the site, whether on one of four corners of a road intersection or in between road intersections, affects the orientation and location of the buildings. This in turn affects the traffic flow, service roads and utility locations.

There is more to planning the site than meets the eye. It is what cannot be readily seen that requires investigation, analysis and solution. A sure foundation for proper design of the building plant layout, good use of the topography, economically designed foundations, utilities and services, good traffic pattern, and orientation means just one thing, don't be fooled. The site is *not* the same! Take each site as a new assignment and master it.

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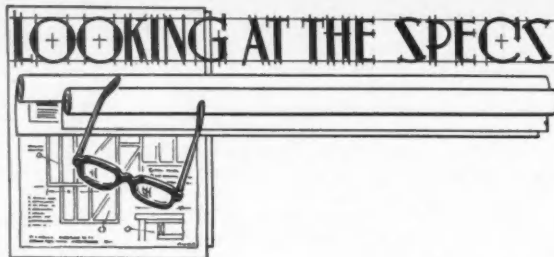
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EDITOR, ARIZONA ARCHITECT

The enclosed pamphlet came through the office mail about a month ago. For some strange reason, I read it. The message coincided with a current office problem i.e., attempting to specify certain building materials and equipment without writing a closed spec so that competing materials and equipment can get in on the bidding and keep prices right and yet avoid the pre- or post-bid headache of approving biddable materials and equipment.

On two recent projects out of the office I work for, our specifications utilized the "Base Bid with Specific Alternates" method as listed in the pamphlet, for the Window Wall Division with excellent results. It eliminated a hectic scramble.

BERNIE KINSOCK, Tucson

BASE BID WITH SPECIFIC ALTERNATIVES

Individual features of design, construction, finish, and other factors often are critical differences between similar but competitive products in each category of school equipment. Recognizing this, school authorities and their school architect may wish to weigh each product in its turn, with its cost and educational function also in the balance. Therefore a base bid is prepared, specifying the products of one manufacturer. Then an alternate bid on this same type of equipment is prepared for each additional manufacturer's product the school or architect wishes to consider. In submitting his total bid the general contractor includes the base bid specified. He also includes alternate bids on the alternate equipment as specified by the architect or school authorities, and any increase or decrease in cost from the base bid is reflected. Here again, the selection rests with the informed educational authorities who act from a knowledge of their educational goals, based on comparative analyses of competitive products and their costs.

(From "Getting More Value For Your School Dollar," published by the School Facilities Council of Mount Vernon, New York.)

(This pamphlet may be obtained from the School Facilities Council, Office of the President, 257 Fourth Avenue, Mount Vernon, New York. The pamphlet includes sections on Pre-Qualification of Bids, Allowances, Pre-filed Subs Bids.)

Costs Up, Up, Up . . .

The cost-to-build in the eleven states west of the Rocky Mountains increased 2 per cent in the six month period ending Oct. 1, according to Myron L. Matthews, manager-editor, the Dow Building Cost Calculator.

Nineteen cost-sampling cities reported increases of from one to 3 per cent during this six month period. The cumulative increase for the year just past is also 3 per cent.

The cumulative 18-year increase from 1941 in these eleven states is 164 per cent. This means that the house costing \$7,500 in materials and labor in 1941 would cost \$19,800 today.

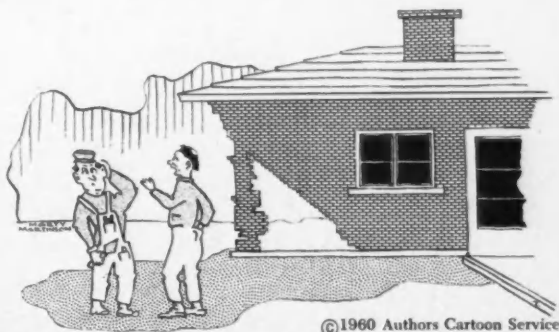
Average construction costs in the United States (excluding Alaska and Hawaii) have continued moving upward with somewhat more vigor than was in evidence last winter. This might be only a reflection between the cold and warm weather character of the market, Mr. Matthews explained. Costs are expected to be 3.5 per cent higher by October 1960.

In these eleven western states, the 1941 building dollar has averaged an annual shrinkage of 3.4 cents in purchasing power until now 62 of the original 100 cents have faded away.

Each dollar invested in a building in 1941 is now worth \$2.64, less physical depreciation of at least 20 per cent. This leaves \$2.11, a gain of \$1.11 on each dollar, or an annual average of 6.2 per cent.

Base wage rates for building workers have gone up from one to 5 per cent in the six months ending Oct. 1 in 18 of the 19 cost-sampling cities; wage rates in one city remained unchanged. Building material prices for the same period rose from one to 3 per cent in 9 cities and remained unchanged in 10 cities.

Building materials prices for these eleven states are up for both the six-month and twelve-month periods ending Oct. 1. Building materials prices in these eleven states average 130 per cent higher than they did in 1941.



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Don't Let "Square Foot" Costs Mislead You

By EMERSON C. SCHOLER, AIA

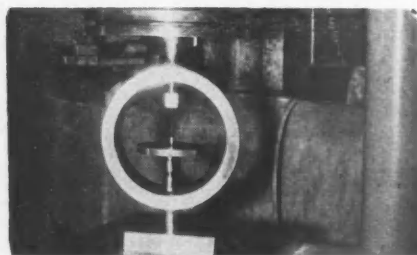
Generally, when discussing school house construction costs, we hear quotations as to the cost per square foot. Square foot cost comparison can be misleading, particularly in light of the many variables which are involved. One of the things which brings about the most confusion in this matter is simply the method used to compute the area of the building.

The American Institute of Architects has established a standard method of determining the area of the building. This method of area determination uses all of the area represented by those dimensions inside the outside surfaces of the exterior walls, taken at their full value, and figures covered porches, covered walks and similar projections at one-half. Roof overhangs, however, are not to be used in computing the area of the building. I know of one case where a comparison of school cost was made on a square foot basis, and to enhance the apparent or claimed economies, the area of the building was computed to include the roof overhang. This made a considerable difference, and, consequently, showed very favorably until the method of computing the total area was exposed.

What is included in "square foot cost" is equally important. I believe that it is here that we have our greatest misunderstanding. Too many times the comparison is made simply against the construction price and then there are additions which must be made to complete the building. These additions are seldom, if ever, included in the price quotation. For example, I know of a school recently let which reflected a \$6.25 per square foot cost, and this is true for the construction contract as such. However, the particular school district later installed, from other funds, resilient floor covering, light fixtures in the classrooms, evaporative coolers, acoustical tile ceilings, cabinet work, and chalkboards and tackboards. These items could have easily aggregated another \$1.65 to \$1.75 additional cost which should be expressed in the square foot cost of the building. These items alone represent more than a 26% increase.

We also find that many government agencies never include site work and utilities in their square foot quotations. Again, this is misleading and should be avoided.

If we could all agree on the same method of computing the area, and include not only the construction but the built-in equipment, site work, utilities, and architectural fees as well, then we would have a useful expression regarding costs. I believe this is of utmost importance. The laymen who are involved in establishing budgets or bond issue amounts for the



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financing of schools should understand that they must include all costs involved in the construction, as well as the costs of equipping and preparing the building for use. I am not sure how we might implement such a program, but perhaps the AIA throughout the state could cooperate with district and county school administrators and agree upon a standardization of cost computation. •

— AIA —

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The Fourth National Convention of the Construction Specifications Institute will be held April 25-27, 1960, at Rickey's Studio Inn in Palo Alto, a few miles south of San Francisco. Transportation to and from San Francisco will be readily available.

The Institute includes more than 3,000 architects, engineers, and material suppliers interested in specifications for construction projects. Its 40 chapters are distributed from Maine to Florida, and from Puget Sound to San Diego. More than 300 delegates are expected.

The convention is of a technical nature, but entertainment for the ladies in the afternoon and for delegates and ladies in the evening is provided in San Francisco. A post-convention tour to Hawaii is planned for those who want to make the convention a stepping stone to a short and interesting vacation.

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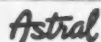
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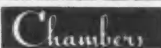
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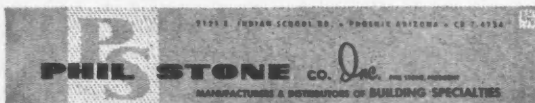


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The Law — Architecture

BY ALBERT B. SPECTOR
MEMBER, ARIZONA STATE BAR

I. INTRODUCTION

Apparently irreversible inflation, which continues to lower the purchasing power of the public construction dollar actually spent for materials and labor, has focused attention once more on the six percent of actual cost which by Arizona law can be spent for architectural fees on public works. The discussion has been particularly heated in connection with new school construction. An exploding school population has made it appear that too little has been planned too late — and sometimes constructed by public agencies in the wrong places, without any regard to proper traffic flow planning. Accordingly, it was suggested that some references to the leading Arizona cases and statutes might be helpful to public agencies and the architectural profession, as well as to others interested in the design and construction of public works.

II. SOME LEADING ARIZONA CASES

In *State v. Beadle*, 84 Ariz. 217 (1958), the defendant had designed for the owners a motor hotel costing in excess of \$10,000.00. He was charged with two violations of law: Practicing as an architect without registration and also practicing as an engineer without registration, in violation of the Technical Registration Act of 1935, hereinafter referred to as the "Act," now contained in Arizona Revised Statutes Sec. 32-145. The trial court certified certain questions arising from the case to the Arizona Supreme Court for decision.

At the same time the Act was also considered by the Arizona Supreme Court in two companion cases. These are entitled *State Board of Technical Registration v. McDaniel*, 84 Ariz. 223 (1958), relating to disciplinary proceedings against an industrial engineer, and *State Board of Technical Registration v. Bauer*, 84 Ariz. 237 (1958), relating to the power of the State Board of Technical Registration to require an applicant to take a written examination prior to the issuance of a certificate of registration as an architect.

Title 32 of the present Arizona Code deals generally with "Professions and Occupations" which are licensed and regulated by Arizona. Chapter 1 of this title deals specifically with the Board of Technical Registration which licenses and regulates Architects, Assayers, Geologists and Surveyors.

In these three opinions written on behalf of a unanimous Supreme Court by Mr. Justice Levi S. Udall, the following points of law were decided:

And Public Works

Some Arizona legal points

1. The Act was held constitutional as a proper exercise of the state's police power to protect the public health, safety or welfare.

2. The legislature may establish reasonable standards to be complied with as a prerequisite to engaging in such professional pursuits as architecture and engineering, and may properly adopt the convenient and desirable expedient of providing for appointment of a board of qualified persons to enforce prescribed standards, and may also confer jurisdiction upon such board to take disciplinary action.

3. A person who designs buildings cannot escape responsibility therefor by merely declining to assure safety of the structure when it is constructed according to his plans, but he is "practicing architecture" and as such must be registered.

4. One not registered as an architect or engineer who, without representing himself to be a registrant or an architect or engineer, designs for another a structure with respect to elements of convenience, utility, cost and esthetic proportion, and to the extent necessary to embody such elements of design, prepares drawings and designates materials and elements of construction is subject to prosecution though he does not design, represent, sell or contribute any service with respect to soundness or safety of such structure.

5. That the engineer's conduct in practicing architecture without a registration would constitute a misdemeanor, would not preclude his answering to Board of Technical Registration in disciplinary proceedings on ground of professional misconduct as engineer.

6. The Act contemplates that an engineer place his seal on engineering plans only, and an architect place his seal on architectural plans only, and hence the engineer is guilty of professional misconduct in placing his seal on architectural plans.

The Supreme Court in its opinions recognized a basic fact which has been overlooked in a great deal of current discussion concerning the cost of designing and supervising the construction of safe school buildings: That it takes many different kinds of technical skills to properly design and supervise the construction of a safe modern building. Before technological advances placed inside a building such modern conveniences as indoor plumbing, indoor artificial lighting and mechanical heating, cooling, ventilating and cleaning of air, the only engineering services in connection with a new building related to the structural engineering of the foundations, roof and walls of

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the building. Of course, even with respect to these basic items, it is obvious upon simple reflection that architectural design concerns itself not only with esthetics but also with designing a building, which will have walls and a roof that stand up to the onslaught of the elements like wind, rain, lightning, hail, etc.

Today, however, an architectural firm which does not have on its own staff special engineers must hire individuals who are specialists in structural, mechanical, air conditioning, lighting and similar engineering fields. It is only by correlating the efforts of these specialists into one final set of plans for the structure to be erected that the supervising architect can be certain that the school, or other building to be built, will be safe and functional for its purpose from an air conditioning, plumbing and electrical point of view as well as structurally sound in the old-fashioned sense of proper foundations, walls and roof. It may also be that the supervising architect will avail himself of the services of professional decorators and designers, but all suggestions furnished must be checked from a safety point of view by the architects and engineers.

III. SOME ARIZONA STATUTES IN POINT

In many instances the Arizona Legislature has recognized that in order to insure safety in the design and construction of public works by the state or its

political subdivisions, like a school district, it is essential that the design and actual construction be under the personal direction and supervision of a registered architect or engineer. A.R.S. Sec. 32-142, A, provides for this very thing:

"Public Works.

A. Drawings, plans, specifications and estimates for public works of the state or a political subdivision thereof involving architecture or engineering shall be prepared by or under the personal direction of, and the construction of such works shall be executed under the direct supervision of, a registered architect or engineer."

The section above quoted is in the Technical Registration Act itself as part of A.R.S. Title 32. The entire nature of employment of architects and engineers by public bodies for the design and construction of public works is more generally covered in A.R.S. Sec. 34, Chapter 1, Article 1. A.R.S. Sec. 34-102 provides as follows:

"Employment of architect or engineer for work on public buildings and structures; contract.

A. When authority is given by law to an agent to construct a state, county or other building or structure, or additions to or alterations of existing buildings or structures, *an architect or engineer or both, as warranted by the type of construction, shall be employed by the agent if the work is deemed of a nature warranting such employment.*" (Emphasis



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We emphasize portions of the quoted section to show that the Arizona Legislature itself has recognized the increasing mechanical complexities of a modern structure and has provided for the employment of both architects and engineers as warranted by the type of construction. Historically, of course, it has been and still is the custom to employ a supervising architect who then proceeds to pay out most of the architectural fees allowed by law by associating with him engineers whose special skills and services are needed in different engineering fields so as to insure the safety and fitness for purpose of the design and actual construction of the proposed public building.

Another section of A.R.S. Title 34 fixes the maximum of these fees at a total of 6% of the actual cost of the work. This total includes the well known "not to exceed 1½% for preliminary sketches and tentative design; not to exceed another 2½% or a total of 4% for complete working drawings, specifications and details, the 4% also to include payments previously made for preliminary sketches; and then, of course, the final 2% for supervision of construction."

Recently many school boards and architects have been faced with the problem of how to pay the architect for preliminary sketches and tentative designs in the event the voters defeat the proposed bond issue which was to pay for architectural services as

well as construction. It is our view that there is ample authority in Arizona law to protect the architect for bona fide services in the planning stages, including preliminary sketches and tentative design. First of all, A.R.S. Sec. 34-104, E, specifically provides that where a proposed project is abandoned through no fault of the architect, he is to be compensated upon the percentage allowed by law. Another matter that must be kept firmly in mind in this kind of situation is that the architect's contract with the school board must specifically provide that he is to be paid for preliminary sketches and tentative designs even if through no fault of the architect (as for example the failing of a bond election), the architect is not further employed to proceed with the architectural service stages relating to working drawings and details and supervision of construction. This item is specifically covered by A.R.S. Sec. 34-104, C.

The architect should also arrange with the employing agency, whether it be school board or other public agency, that adequate funds are budgeted by the public agency to pay for services. In order to make certain that legal questions are not raised, it is preferable that public funds for the payment of architectural services be specifically budgeted as such, rather than be set up in a general contingency fund without specific designation.

Specifically with reference to school boards, the Arizona Legislature has given them additional legal

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authority by necessary implication in the following legislation. The school district, pursuant to A.R.S. Sec. 15-433, A, may employ any employee under written contract whose services may be "necessary." It is our view that a school district could enter into a written employment with an architect for planning services for future school needs including those incident to future bond elections relating to the acquisition of sites and the construction of buildings, and in such contract could agree with the architect on the compensation, including even an hourly rate, so long as all compensation for architectural services including preliminary sketches and tentative design, does not exceed 1½% of the estimated cost of the proposed project.

Likewise A.R.S. Sec. 15-445, A, 4, relating to control of school property, empowers the Board of Trustees to "construct school buildings, or purchase or sell school sites when directed to do so by a vote of the District"; and in subsection B of the same section, the Board of Trustees of a common school district is given additional authority: "The Board may include in its annual budget items for the purchase of sites or the erecting * * * of school buildings". This must be passed upon by the Board of Supervisors and they may include such items in the familiar ten cent levy, including architectural fees necessarily incident to the erection of the school buildings.

But the most precise legal authority on this score is to be found in A.R.S. Sec. 15-438, reading as follows:

"Employment of professional help.

The board of trustees may employ professional personnel deemed necessary for making surveys and recommendations relating to the curricula, physical plant and other requirements of the district."

Since we have seen that another section of the Arizona Code requires that any public building by any political subdivision must be executed under the personal direction and supervision of a registered architect or engineer, all these sections in the several titles must be considered together so that the authorization to purchase a site or the authorization to erect a school building carries with it the authorization to hire the proper professional personnel and technical assistants needed to make certain that the school district gets the most for its money, and that sites and structures are planned with public safety firmly in mind.

Recently, we have witnessed again a great many misleading references in public discussions to the large amounts of architectural fees paid out in connection with school construction. Unfortunately, misleading statements and half-truthful statements can be more colorful and therefore more appealing to the human eye and ear than a recital of objective facts.

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Hence there are very few references in these public discussions that in fact by law the total fees for all architects and all engineers, and for all services from the earliest preliminary sketches to the final details of actual supervision, cannot exceed 6% of the actual cost of the building. Nor does one see any reference to the fact that actual experience indicates that only a nominal portion of the 6% fee remains in the hands of the architect as full compensation for his services, including whatever profit he might have on the particular job, after he pays out fees to all kinds of structural, mechanical, acoustical and electrical engineers, designers, and even color consultants, draftsmen, specification writers, blue print companies and field supervisors of actual construction, to list but a few of the many expenditures involved.

We have no quarrel with the legal position taken, for example, by the County Attorney of Maricopa County in his School Opinion No. 59-6, dated March 26, 1959, to the effect that the Phoenix Union High School District could employ a licensed architect as an employee to render architectural services instead of employing an independent architect. As a bare legal conclusion, unrelated to the designing or construction of a specific school building or complex of buildings, we doubt that anybody could say that the District did not have the bare legal authority under a literal reading of the statutes. However, as many a learned judge has known for generations, and

as the semanticist has recently discovered, words, even statutory words, are like colorless crystals which take on their meaning from the context in which used. Even the County Attorney in the same opinion indicated that an independent architect would have to be employed for major construction when school buildings are constructed pursuant to school district elections.

We can't help but wonder how the school district architect, employed full time by the district only, could provide all the necessary architectural, engineering and inspection services which are needed in designing any modern buildings so as to make certain that it is safe by being able to stand up to the elements outside the building, and by being able to control safely the many conducting devices within the building for water, air, electricity, gas, etc.

The most recent expression of the Arizona Legislature on the subject of architectural services indicated that it understood the distinction between the proper services which can be rendered to a governmental agency by a full time architectural employee, and those professional services which can only be rendered by an association of engineers and architects working under the supervision of an independent architect.

In 1956 when the Arizona Legislature passed the statute which created the State Planning and Building Commission it included in its powers, which are

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now to be found in A.R.S. Sec. 41-571.03, a clear distinction between the employment of architects as employees on a full time or part time basis for the purpose of planning the programs of the Commission — and the entering into of contracts with independent architects for professional services for the actual design and construction of specific improvements, including all the stages from preliminary sketches to final supervision.

It is submitted that even though this distinction has not been specifically stated with respect to other public agencies by the Arizona Legislature, as a matter of sound public policy and good common sense for the promotion of public safety, each public agency might well follow this distinction.

IV. CONCLUSION

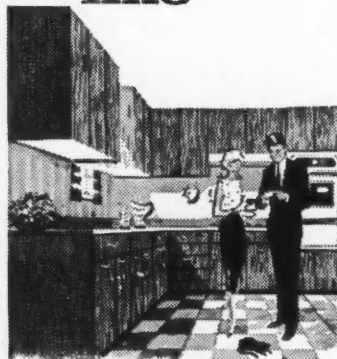
It has been aptly said that a little knowledge is a dangerous thing. Each profession, whether it be that of architecture or law, recognizes this danger with respect to those not duly admitted to practice that particular profession. In that spirit, we must sound a word of caution that this brief review of some legal aspects of architecture should not be used as a purported "bible" to answer all legal problems remotely touching these contents. These thoughts have been submitted for publication with our confidence in the members of the architectural profession that each will consult his own lawyer with reference to the specific facts of specific cases. •

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The Cost Of Socialized School Design

"In the State of Washington it took a staff of 20 to 25 state-employed draftsmen two-and-a-half years to complete one stock plan, which was obsolete by the time it finally got done."

(From an address before the New York Society of Architects
by the President of The American Institute of Architects.)

JOHN NOBLE RICHARDS, FAIA

There are going to be some 34 or 35 million more of us ten years from today. It will not be easy to find room for them in our large population areas without destroying our remaining countryside and parkland. Space, we are beginning to find, is our most precious commodity. We simply can no longer clutter up our available space with improvisations, shortcuts, or temporary solutions. We can no longer afford such luxury of waste. It will be difficult enough to finance all the housing, the highways, the utilities and facilities and — since our worst troubles are the little ones — the needed schools for our children.

Let's dwell on this subject for a moment.

You are all familiar with the statistics:

Since World War II more than 45 million children have been born in our country. Their education requires five hundred thousand new classrooms in the next seven years. At the current rate, the bill for these classrooms is somewhere around seven billion dollars. And more children are born every day. More schools become obsolete and some are becoming dangerous firetraps which must be replaced.

This is an enormous burden on us who must pay for these schools with our tax money.

But skimping, fast buck and universal solution schemes are not economy, but wasteful foolishness.

This is why I was somewhat dismayed to read in a recent issue of the New York Times that the governor of your state has given his "qualified support" to the illusion that you can stamp out school buildings for our children from uniform blueprints like so many motor cars.

Your governor, the New York Times reported, "has told his aides that he is interested in having the state education department adopt a voluntary system under which stock plans could be made available to any district planning a new school.

"The basic purpose of uniform school plan," the report continues, "is to save money for the localities, by eliminating, at least in part, the need for an architect."

Let me state flatly that this kind of socialized school building would be not a help but an additional burden to the taxpayers of this state. Stock plans are planned waste.

The proposal is not new of course. It sounds plausible.

The trouble is it just doesn't work. During the past few years school boards, state officials and architects have gained considerable experience with stock plans for school buildings. Virtually all of the 26 states that have tried the idea have given it up. Only six still use it, five of which provide plans for only four-room schoolhouses.

The reasons are simple.

Mr. John L. Cameron, not an architect, but the head of the School Housing Section of the U.S. Office of Education, has set them forth in a few simple words:

"While there are similarities, the planning of each school building project is a different problem.

"Orientations are different; site topographies and shapes are different; the availability and location of utilities are different.

"Most important, a school building should be designed to accommodate the educational program as a particular community has determined its needs and wants.

"The building should also be a source of pride to the community."

To me this last argument carries great weight. The schools we build today are an important part of the second America. They are not merely an educational plant but a symbol of our learning and desire for culture and education. In many rural communities they also serve as a sort of community and cultural center. They should reflect the character and uniqueness of each community. Do we really want to stamp them out in uniform monotony? Let's remember we can't trade in schools for a new model every year or two.

However, this consideration may perhaps be dismissed as sentimental.

Nevertheless, there are a number of very practical considerations and questions. My first one is:

Do we consider present school building designs so perfectly suited to our educational programs of today and tomorrow that we can afford to freeze them for mass production?

I think not.

But this is just what you do if you prepare stock plans. They are not stock plans if you don't continue to use them over several years. That means that you

SOCIALIZED SCHOOL DESIGN

cannot incorporate new advances in design and materials, that you will fail to keep up with the changing needs and added experience of our educators and our communities. You block competition and with it our constant striving for higher excellence and greater building economy.

And who will draw up the stock plans?

Presumably state employees. This alone will cost more money than if the work is performed by private architects. Many of you will recall the investigation of the Bureau of Design and Construction of the New York City Board of Education not so long ago. It was found that the cost of preparing plans by municipal architects ran to from 18 per cent to 20 per cent of the total construction cost. Private architects render the same service for from 9 per cent for smaller jobs to 6 per cent for larger ones. The City saves 10 per cent when it commissions a trained private architect.

Government bureaucracies, as we all know, are expensive enough. Let us not add to them unnecessarily at greater cost to our taxpayers.

For the use of a stock plan is not a one-time investment. It is a very expensive matter as the 20 states which abandoned this scheme have discovered.

In the State of Washington it took a staff of 20 to 25 state-employed draftsmen two-and-a-half years to complete one stock plan, which was obsolete by the time it finally got done.

It takes considerable time and money to adapt stock plans to the site, the available utilities, and the other unique features Mr. Cameron outlined. And when this is finally done the construction job must still be supervised — a service which is included in most private architectural service contracts. But the cost of this service is conveniently excluded in most stock plan promises.

Who decides on the plans?

Since the state draws them up, I suppose the state intends to select the plan it will offer local communities for adaptation.

This, I'm afraid, comes dangerously close to state control over the local community — a notion to which most of our citizens are traditionally opposed.

And, may I ask, if the state proposes to enter the field of architecture why shouldn't it by the same logic enter the field of the general contractor, the plumber, the heating contractor, the electrician and all other skills required to put up a school?

No, I am aware of the fact that the latest model of the Gordon-Fulmer bill, which your governor seems to have endorsed, excludes larger cities with a population of 125,000 or more from the stock plan scheme.

Does that mean that your cities may have good custom designed schools while small towns and your rural communities are to content themselves with mass designed state issues?

Perhaps the proponents of the new stock plan bill

Schooling For Technology

This issue of the "Arizona Architect" reminds us that our schools provide the greatest assurance that the America of tomorrow will continue strong and free.

After all, it's the training provided our young generation today that determines their ability to meet the ever-mounting problems confronting us.

Over and beyond the readin', writin' and 'rithmetic we all need, there's a demand for technical schooling, too. It's essential for the technological demands of our day.

So it is, that the Phoenix Pipe Fitting Trades Apprenticeship Committee has just opened expanded quarters for the schooling of apprentices. It's added assurance that the pipe trades contractors of tomorrow can continue to protect your health and safety.

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are aware of this discrimination against New York's smaller communities. At least they propose to make the use of stock plans optional.

But then why make it at all? Why tempt the taxpayers with a proposal of alleged savings when the experience of 20 states and that of most school administrators and all architects counsels against the scheme?

Some people may say that architects are only opposed to this idea because we have a vested interest in this matter. We are told we are biased. We are accused of fearing the loss of plush fees.

I'm afraid such people know little about the architect-client relationship. Our profession was organized more than a hundred years ago. For over a century we have successfully labored to raise our ethical standards — some feel, in fact, that we are too strict. We have struggled hard to increase our professional competence.

The overwhelming majority of building owners are satisfied that their architects act faithfully and consistently in the best interest of their clients, their communities and society as a whole.

On the basis of our status as professional experts, I feel that our advice on this matter of school construction deserves the same respect as that of, say, the medical profession on matters of public health.

And when we talk about school construction costs,

let no one forget that we architects are taxpayers, too.

The constant efforts of architects to reduce the cost of school construction — which in the state of New York amounts to 12 cents out of every school dollar — is well proven by one simple statistic.

In the last 20 years . . .

. . . the cost of common labor has risen 330 per cent

. . . the cost of general construction has risen 250 per cent

. . . the cost of automobiles has risen 200 per cent

. . . but the cost of school construction has risen only 150 per cent.

This is due in large part to painstaking attention to the minute and detailed requirements of each individual school which no stock plan can provide.

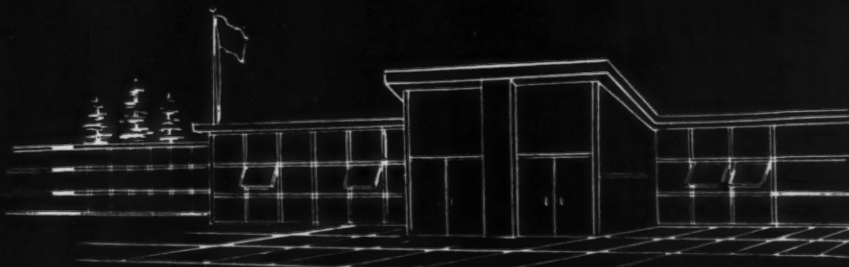
Because of this meticulous attention, our school structures today are better and more lasting than those designed 20 years ago. They have kept pace with our more complex educational needs.

This is not to say that further savings are not possible without impairing the excellence and appropriateness of school buildings.

A study on economy conducted for the New York State Department of Education by architect Wayne F. Koppes and Dean Harold D. Hauf of the School of Architecture of Rensselaer Polytechnic Institute emphasizes that "cheapness" is not necessarily "low-

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cost," and that "maximum value" must be the criterion for judgment.

It suggests that savings can be effected by

... wider use of modular planning, repetitive units, and off-site fabrication

... recognition of the importance of maintenance costs and consistent efforts to reduce them

... objective research as to the real needs in schools aimed at reducing arbitrary but unessential requirements for structure and equipment, and by ...

... improvement in the methods of financing.

Here, then, are fruitful activities for the State to ease the local school housing burden — a burden which all of us who pay taxes are fully aware of.

Our present physical environment has rightly been called "the mess that is man-made America." Our present population explosion and the consequent building boom are giving us another chance.

The way we handle this opportunity will determine whether our civilization and our culture ... yes, and our noble political ideals of democracy and our lofty economic ideals of free enterprise ... will succeed or fail.

Traffic congestion, land, water, and air pollution, slums and squalor, ugliness and chaos in our cities and suburbs will spell failure — no matter how many missiles we manage to shoot at the moon.

Sensible traffic solutions, open spaces, fresh water and clean air, livable, enjoyable and beautiful cities, lasting and attractive schools and other buildings, will mean success ... success for democracy and our American way of life ... success no matter how many sputniks Comrade Khrushchev sends up.

We have the ability and we have the potential. We have the planners, the engineers, the artists and the architects to create an environment of beauty and order in our time.

All we need is the will to do it.

We have no time to lose. The future has already begun. ●

Through general education obviously our people should be taught the importance of beautiful surroundings. Less than ten per cent of our people have ever been out of the country. Perhaps the jets will change this and our people will be able to see what beautiful countries the older cultures have created.

The construction of art museums in various parts of our country, our participation in international expositions, the great Lincoln Center for the Performing Arts in New York, and the proposed National Cultural Center in Washington, all herald a period of cultural maturity in our country.

—Edward D. Stone, FAIA

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If the work has bin done without expense to the contracter, the work shall be taken down and done over agin until the expense is satisfactory to the inginear.

Anything that is right in the plans shall be considered right; anything that is rong on the plans shall be diskuvered by the contracter and shall be made right without telling the ingenear or indercatin it in the bills.

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CENTRAL ARIZONA CHAPTER NEWS

• 77 members, wives and guests were present to witness the installation of the chapter's new officers at the annual Installation Dinner held January 7th at the Arizona Country Club. Outgoing president John Brenner was presented a certificate of appreciation for his work during 1959, and incoming president Jimmie Nunn's warm and dignified address was enthusiastically received by the audience.



New corporate members John Kahl, Ralph Morton, Roy Walker, and Joe Hughes, (l. to r. in photo), were presented their certificates by John Brenner.

• The chapter has purchased a 16mm sound projector, which is available for use with the AIA films also on hand. These include: "A School for Johnny", "Building for Business", "Architecture USA", "What is a House", and "A Place to Worship." Members are

reminded that these public relations tools make excellent programs for service club and other group meetings.

• Associate member Bill Baker has opened an office in Mesa. Bill has been in the office of Kemper Goodwin, who will be associated with him in the new practice.

• Rex McIntire has left the firm of Brenner-McIntire-Arnold. We've heard that Rex will be doing business in Casa Grande.

• Members of the Executive Committee will journey to Casa Grande on January 30th for the annual meeting of the Arizona Society Council. An important item on the agenda will be Em Scholer's report on his trip to Washington in connection with the Bureau of Indian Affairs, which has recently withdrawn all work from the hands of private architects. Also on the program will be election of officers.



A set of photographs taken at the 1959 Central Arizona Chapter installation caused interest, amusement.

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Directors and officers of Central Chapter for 1960 are, from left, (standing) David Sholder, A. John Brenner, Martin Young, Jr., (seated) Charles Hickman, Kemper Goodwin, Jimmie Nunn, and Lester Laraway.

— AIA —

There is a New America every morning when we wake up. It is upon us, whether we will it or not. The New America is the sum of many small changes — a new subdivision here, a new school there, a new industry where there had been swampland — changes that add up to a broad transformation of our lives. Our task is to guide these changes. For, though change is inevitable, change for the better is a full-time job.

— Adlai Stevenson

SOUTHERN ARIZONA CHAPTER NEWS

- At a recent joint meeting with Arizona Building Contractors, the chapter heard a report on the building program of Tucson School District No. 1 from Superintendent Robert Morrow. Members of both groups gave Morrow a standing ovation and adopted a resolution favoring the District's over-all building program and offering their support in any way.
- The chapter's Research Committee is co-operating with Fay Jones of the Home Economics Department at the U. of A. in a five year research program of space studies in the home. First phase of the project will deal with color.
- The chapter has completed forms nominating Philip Will, Jr., as president of the Institute.
- Progress is being made, under the direction of Kirby Lockhard, for sketches and layout for a map showing architectural points of interest in Tucson. All architects have been asked to assist in suggesting buildings to be included.
- Due to the resignation of Dave Swanson as chapter vice president, Arthur Brown has been appointed by the executive committee to serve in that capacity.
- The chapter's exhibit at the Parade of Homes, sponsored by the Tucson Home Builders' Association, will be open for the 16 days of the show, January 30 to February 14, inclusive.

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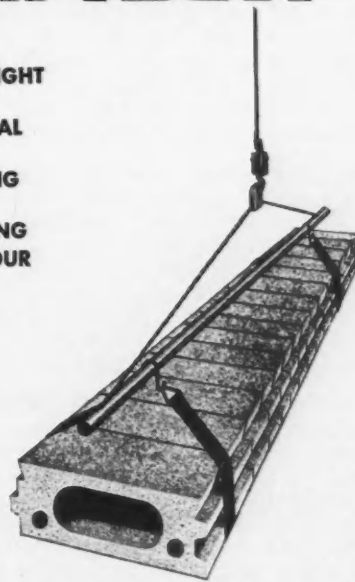
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IN THE BOOK WORLD

HORIZON, A Magazine of the Arts. American Horizon, Inc. \$3.95 single copies, \$18 annual subscription. Now in its second year of publication, it is apparent that *Horizon* is giving the art of architecture its due respect. Every bi-monthly issue has had lavishly-illustrated articles on architecture or architecturally related subjects.

Notable in recent months (September) was Allan Temko's "The Dawn of the 'High Modern'," which helps answer the question: "Can the twentieth century produce a synthesis of art and architecture to match the Gothic?" By way of answer are text and photos illustrative of the work of Le Corbusier, Mies van der Rohe, Antoni Gaudi, Juan O'Gorman, Oscar Niemeyer, Frank Lloyd Wright, Felix Candela, Wallace K. Harrison and others.

Of the examples shown, the author says, "They are thoroughly modern; they meet all the requirements of function and exploit all the resources of present-day technology. But they have been made interesting to look at — through the heightened use of color, ornament, opulent materials, and expressive form. Some have made painting and sculpture welcome once again by installing it on the premises. Some have gone further and attempted a true integration of decorative and structural elements. And a couple of them are so free and shapely in outline that it is hard to say whether they are architecture or sculpture, or a dazzling new synthesis of both arts.

"Street furniture" — lamp-posts, benches, advertising kiosks, hydrants and signs as seen in American cities — are the subject of an article by Ada Louise Huxtable in the November issue. She says: "If we are to stem the tide of 'Horror Outdoors,' we would do well to learn to look at our streets and to see clearly what we have put there. . . . Only by developing perceptive, critical awareness can we hope for greater order and aesthetic quality in this important area of public design."

In the current issue, Temko, with pictures and text, asks: "If the U. S. Government can build such handsome embassies abroad, why can't it give the folks at home something better than Post-office Roman? — P.S.

RECORD HOUSES OF 1959. This book will bring to architects, engineers and a significant segment of the house building and buying public the year's most notable achievements in house design. Compiled by the editors of *Architectural Record*, the book contains 226 pages, fully illustrated with photographs, plans, drawings, 8 pages of full-color photographs and many other valuable editorial features. Soft-bound, with a clear plastic wrapper. \$2.95. Dodge.

PLASTICS IN BUILDING ILLUMINATION a Building Research Institute book. Specific applications of plastics now in use for building illumination with daylight or electric sources are described and illustrated. New applications in the process of development are also presented, including building illumination with multipurpose building elements, insulating plastic wall panels and others. 100 pages. Illus. 1958. \$3.00.

FABRITECTURE: UNION OF FINE ARTS AND INDUSTRY by Oscar A. Turner. Through a lifetime of study of art, technology and mathematics the author has conceived a new fine art. Perhaps it should also be noted that in addition to study, Mr. Turner has been, as well as a student, a lifelong practitioner in the decorative and design application of art as an integral part of industry and business. He confronts us with a challenging concept and an exciting new nomenclature based on fundamental semantic reasoning. Throughout the book the author uses illustrative material for the exposition and defense of his theory which has been drawn from history, physics and mathematics. 137 pages. Pageant. \$3.00.

OUR HOUSING JUNGLE AND YOUR POCKET-BOOK by Oscar H. Steiner. In Cleveland, Ohio Mr. Steiner and his associates have razed three slum areas and built three large, cooperative, occupant-owned, garden home developments. They have done it as practical businessmen with the aid of the municipal authorities and the local savings and loan banks without one cent of Federal money. More important, they have succeeded in earning a fair return for their sponsors. This book is the record of the Steiner achievement. It proves to the hilt the author's contention that Federal subsidies will not solve America's slum problem. Privately financed, low-cost, local housing — dwellings which the average wage earner can live in as owner, not renter — is the practical answer. The Steiner Plan will interest all tax-weary Americans who, appalled at spreading slums, believe that every wage earner should have economical access to home ownership.

THE SECOND TREASURY OF CONTEMPORARY HOUSES by the editors of *Architectural Record*. The editors have assembled a new treasury of 44 of the most significant houses designed during the past few years. Selected from all regions and climatic zones of the United States, these houses have one important point in common — they were built to be lived in and enjoyed — and the esthetic desires, practical needs, and financial requirements of their owners are all admirably fulfilled by the finished products. The houses, described in superb photographs, plans, drawings, and a lucid text, range from the inexpensive to the luxurious, from a very few rooms to many, but every one of them displays ideas applicable to any house. 232 pages. Dodge. \$7.75.

RESIDENTIAL CONSTRUCTION MANAGEMENT by Ernest L. Buckley. The author, a professional engineer and senior design engineer with Convair-Fort Worth, directs his book to both the small business man who would like to enlarge his operation and to the established builder who wants to achieve greater economy and quality. With these realists in mind, Mr. Buckley cements together the full range of procedures needed for sound management, administration, and construction. Organizational concepts, methods for preparing construction, land development, plans, specifications, estimates, and budgets are among the topics discussed by the author. He pays special attention to construction scheduling and the need for work control. Other chapters cover subcontracts, material control, sales, and cost accounting. Wiley. \$7.95.

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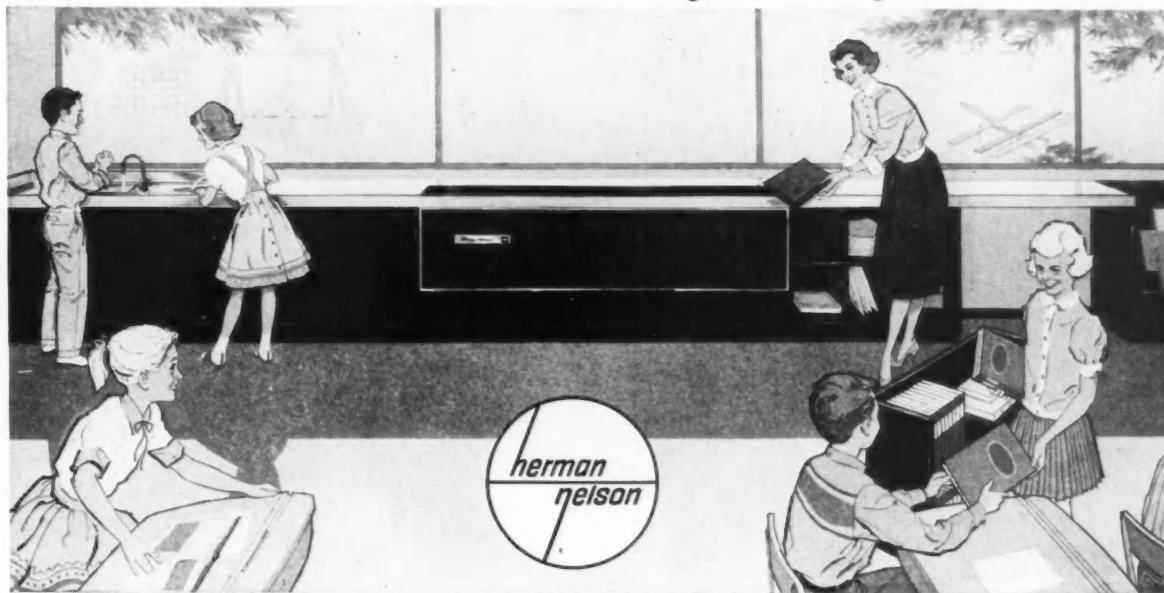
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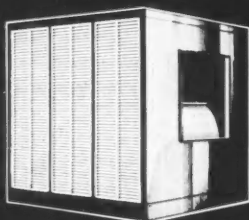
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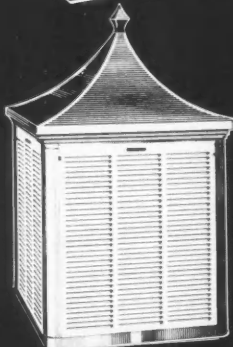
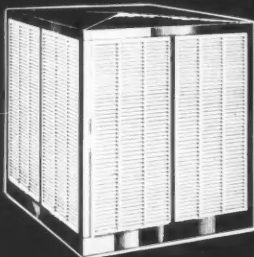
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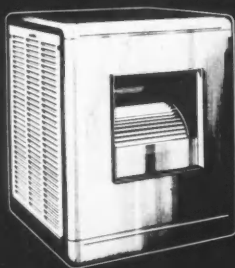
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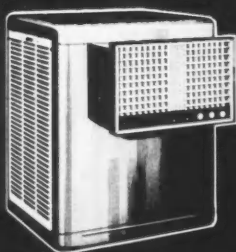
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